

PROVINCE OF SASKATCHEWAN



07-08

ANNUAL REPORT

**Saskatchewan Health
Information Network**

An Agency of the Ministry of Health

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This annual report is also available in electronic format from the Ministry of Health website at www.health.gov.sk.ca/shin-annual-report-2007-2008.pdf

Letter of Transmittal



Regina, Saskatchewan
March 31, 2008

The Honourable Dr. Gordon L. Barnhart, Lieutenant Governor of
Saskatchewan

May it Please Your Honour:

Since the election in November 2007, our government has been building on its values of growth, security, and promises. During this time, government has been deliberating on how to strategically invest in Saskatchewan to ensure the momentum translates into long-term, sustained economic prosperity, and to make certain that everyone who calls Saskatchewan home feels the benefits of the growing economy.

On the day of my appointment, our Premier asked me to carefully steward the health care system in the province and to honour our commitment to improve publicly funded health care. It is my pleasure to report that the leadership and accomplishments of the Saskatchewan Health Information Network (SHIN) are integral elements in accomplishing our commitment.

Our province is building a secure, integrated provincial e-Health system. The benefits are enormous in improving patient safety; reducing wait times and duplicate testing; providing better tools for our health human resources; improving planning and increasing financial accountability for the health care system.

Providing the best workplaces equipped with the right tools to support decision-making and treatment will strengthen recruitment and retention efforts and enable the province to increase the number of health care providers choosing to work here.

I am proud that our Saskatchewan born solutions, our ability to share with other provinces, and our careful planning and resource management, have positioned us well in the country. The endorsement of our approach by Canada Health Infoway as being innovative and worthy of replication by other provinces is high praise.

As the components of our secure provincial electronic health record come online over the next few years, they will join with physician electronic medical records introduced this spring and the electronic systems already running in health regions across the province. The ease and access enjoyed to date by the banking and travel industries will soon be available to the people of the province and to those authorized providers they trust their care to.

I respectfully submit the Annual Report of the Saskatchewan Health Information Network (SHIN) for the fiscal year ending March 31, 2008, including the financial statements duly certified by auditors for the Corporation in accordance with *The Crown Corporations Act, 1993*.

A handwritten signature in black ink, appearing to read 'Don McMorris', with a stylized 'D' and 'M'.

Honourable Don McMorris
Minister of Health

Letter from the Board Chair

The vision of the Saskatchewan Health Information Network (SHIN) is to ensure authorized health professionals have secure access to the right information, at the right time and place.

As a province, we need to do more than just collect patient medical information in file cabinets. We need the ability to integrate all of this information and to have it readily available. We have to be able to manage the data and transmit it to the places where health care decisions are being made. We have to respect patient confidentiality and our secure systems must provide health care professionals with reliable access to the most accurate and complete patient information available, enabling better decisions for diagnosis and treatment.

The union of technology and the human touch is one of the challenges in health care today. SHIN is building systems and tools that extend human capabilities to do things faster, safer, better and more securely. We continue to harness information and communication technologies to improve health and the health care system.

In Saskatchewan, our efforts have been directed toward building an integrated provincial e-Health system. Because it is larger in scope, building a provincial system takes longer initially. Other provinces have produced solutions earlier than us, but have recently had to step back and re-evaluate when asked to make these solutions work together at a provincial level. For them, knitting systems and solutions together has increased their costs. In Saskatchewan, by building on sound practice and careful decision-making, we have created a system where, as it evolves, components link to each other seamlessly the first time.

Through careful planning and resource management, Saskatchewan has accrued minimal costs compared to the investment of other provinces but our results still place us as leaders in the country. In fact, Canada Health Infoway endorses Saskatchewan's approach and architecture as being innovative and worthy of replication by other provinces. We have planned systems, with the help of Canada Health Infoway and the efforts of our Western Health Information Collaborative partners, which we know will link with our provincial partners through common standards.

I acknowledge that in the late 1990's, SHIN had a slow start, but things have changed. In Saskatchewan, the building blocks of our provincial e-Health system are coming together. Electronic Health Record (EHR) solutions are powering up piece-by-piece and TeleHealth and service components such as the Service Desk and the Data Centre are increasing services each quarter. SHIN contributes to a sustainable health care system offering improved quality, accessibility, productivity and cost savings, and we are doing a very good job.

Reflecting on the past year, I would like to thank staff and all of our partners and stakeholders for their hard work and dedication to moving e-Health forward in this province. I anticipate another exciting and productive year in 2008-09.



Max Hendricks
Board Chair - SHIN

Letter from the CEO

As a province, we are well on the way to developing and implementing an e-Health strategy that is completely provincial in scope.

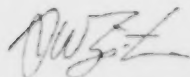
The health care system is complex. Developing a secure coordinated provincial e-Health system utilizing technology to enable improvements requires a significant financial investment and the commitment of a large number of stakeholders over the long-term. The benefits are enormous: improving patient safety; reducing wait times and duplicate testing; better utilization of our scarce health human resources; improved planning and financial accountability for the system.

Planning for several of our new projects, Primary Health Care (PHC) and Electronic Medical Records (EMRs) are in the advanced stages, while key building blocks of the Electronic Health Record are already in use.

In all, thirty-eight systems are centrally hosted by SHIN for regions, agencies and the ministry. These include the Pharmaceutical Information Program (PIP) the Chronic Disease Management (CDM) Toolkit, the Shared Client Index (SCI), the Radiology Information System (RIS) and Picture Archiving Communication System (PACS), the Environmental Lab component of the Laboratory Information Management System (LIMS) for the Saskatchewan Disease Control Laboratory and an increasingly comprehensive set of Integrated Clinical Systems (ICS): registration, laboratory, transcription and pharmacy systems. Our staff maintains the Saskatchewan Surgical Care Network, the HealthCareersInSaskatchewan website and TeleHealth Saskatchewan. More details on each of these projects and services are contained in the body of this report.

Overarching the development of an e-Health strategy are the key requirements of privacy and security. We work closely with the Office of the Saskatchewan Information and Privacy Commissioner and seek the Office's recommendations on our policies and practices. Through media campaigns, posters, brochures and web site materials, residents are informed of SHIN's privacy and security procedures and of their option to mask their personal health information.

I look forward to the successes that lay before us, and I am grateful for the work of stakeholders and staff to bring us to this point. The next phase of our e-Health rollout promises to be just as exciting.



Scott Livingstone
Acting Chief Executive Officer - SHIN

Who We Are

The Saskatchewan Health Information Network (SHIN) was created as a Treasury Board Crown Corporation in 1997. SHIN is accountable to Cabinet through the Minister of Health. Legislative authority is provided by *The Crown Corporations Act, 1993*.

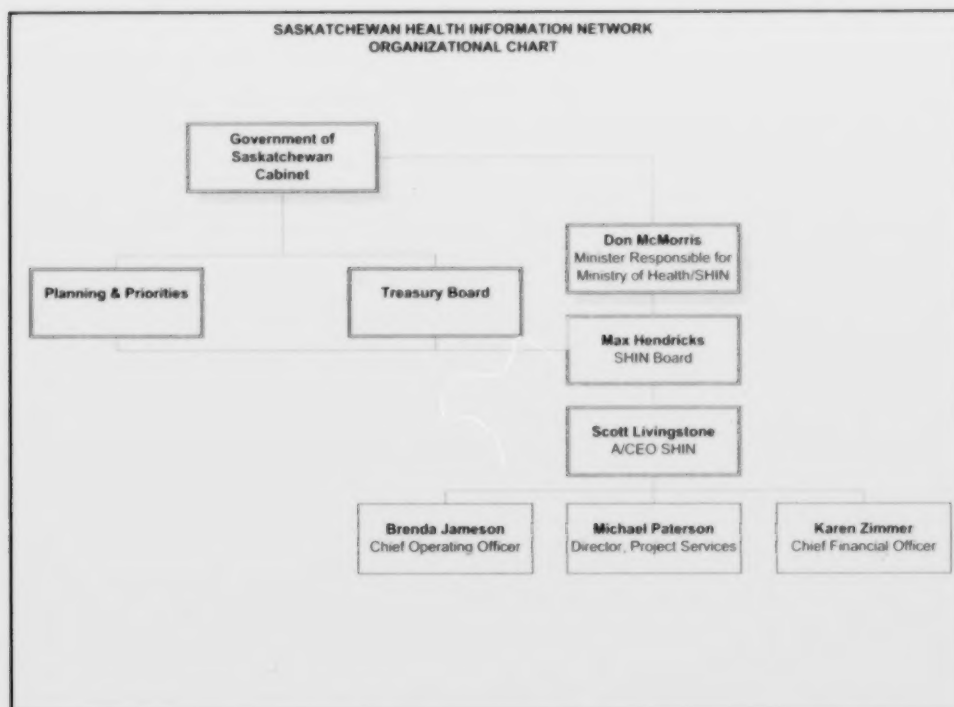
Since its inception, SHIN has developed network infrastructure to connect health care providers across the province in support of ongoing improvements for health services delivery.

SHIN is funded in part by the Saskatchewan Ministry of Health and managed by Health Information Solutions Centre (HISC) personnel. No changes to the structure or mandate of SHIN were made during 2007-08. Organizationally, Mr. Scott Livingstone assumed the acting role of Chief Executive Officer in October 2007.

Mandate

The key roles of SHIN are:

- to provide information management and technology services to regional health authorities and other health service providers and delivery agencies within Saskatchewan;
- to deliver the mandate of an Electronic Health Record for Saskatchewan citizens; and,
- to support health sector initiatives, provide a province-wide health information network and securely, centrally hosted health care applications in the HISC data centre.



Vision, Mission, and Values

The Vision

Through a collaborative effort, ensure health professionals have secure access to the right information, at the right time and place.

Our Mission

- Enhance the quality of patient care by supporting health professionals' decision-making at the point of care through improved access to the information they require.
- Improve the patient experience by supporting improved coordination between service delivery care providers. Provide high levels of security and privacy safeguards to support the exchange of the information between care providers.
- Improve overall efficiency, effectiveness and sustainability of the health sector through the innovative use of technology.
- Inform health system decision-making by providing the necessary information base to support planning, outcome measurements, accountability and research.

Values

We believe in:

- Excellence through innovation, creativity, continuous learning and recognition of achievements;
- Honesty, integrity and openness and respect for all of our relationships;
- Collaboration and teamwork;
- Actions which are client-centered and results-oriented;
- Security of information and privacy of individuals;
- Equitable access to information for our customers;
- Fostering development of information technology in the Saskatchewan health-care sector.

The National Context

Canadian health care is undergoing transformation. Canadians have high expectations for care in their home communities and when they travel. They expect health professionals to have appropriate access to their health records to provide care where and when service is required.

Major health system reviews and reports in Canada and internationally have underscored the need for electronic health record systems, in improving the quality of health care and enabling health system change and modernization.

Saskatchewan has been an active member of the Western Health Information Collaborative (WHIC) since 1999-2000. Other WHIC members include Alberta, British Columbia, Manitoba, the Northwest Territories, Nunavut and the Yukon.

WHIC has been working together on common health information initiatives, and sharing lessons learned while implementing different facets of the technologies required to support a fully integrated health system. As a result, WHIC partners learn from each other and move quickly and efficiently to solutions.

Saskatchewan also collaborates with Canada Health Infoway (Infoway) on electronic health record development (EHR) across the country. Infoway is an independent agency established by the First Ministers of the provincial, territorial and federal governments to accelerate the adoption of electronic health record solutions in Canada. To date, Infoway has received \$1.6 billion from the federal government. Infoway is fostering the development of pan-Canadian standards and approaches for EHR technologies with the provinces and territories and invests in components of the electronic health record initiatives taking place in each province to enable the re-use of systems and knowledge. Saskatchewan continues to be an active

contributor to Infoway's pan-Canadian initiatives, such as the pan-Canadian EHR Standards Collaborative established in 2007.

In Saskatchewan, Infoway has committed over \$57.8 million in funding based on the significant progress our province has made in introducing EHR technologies. This funding will assist our province in being one of the leaders among jurisdictions to have implemented both care provider and client registries – foundational components of the EHR. This foundation, in turn, has enabled Saskatchewan's Pharmaceutical Information Program (PIP) to be one of the first to reduce drug interactions and support safer prescribing practices by implementing the technologies needed by physicians in creating and renewing prescriptions electronically through secure access to the latest drug information. With funding support from Infoway, a Radiology Information and Picture Archiving System (RIS-PACS) was also implemented in the first health region locations this year. Over the next two years this system will significantly improve the delivery of diagnostic imaging services in the province by reducing treatment delays and allowing our imaging specialists to become more productive as they are able to view more images within the same period of time.

In addition to the successful implementation of these new systems, planning for the next electronic health record projects moved ahead in 2007-08 with further funding approvals from Infoway for the Laboratory Results Repository and the Interoperable Electronic Health Record projects.

In the coming year, implementation of new projects, now in the planning stages, will continue. The Saskatchewan Ministry of Health has received first stage planning approval from Canada Health Infoway for several important new projects including a

system for better managing communicable disease outbreaks for Public Health (Panorama Project); a joint initiative with the Canadian Nurses Association and Ontario in improving nursing care outcomes (HOBIC); and an innovative project under Infoway's new Patient Access to Quality Care program.

These projects support provincial health care objectives identified as priorities by the Saskatchewan Ministry of Health and the health regions through our information technology planning process. The ministry is able to share and leverage the experience of other provinces, while receiving significant investment from Infoway to implement critical components of our electronic health record strategy.

Saskatchewan will also continue to play a very active role in pan-Canadian health information initiatives, directions and system interface standards. These developments are consistent with our collaborative approach to leveraging new technologies in improving the health of our citizens.

The Provincial Context

The Saskatchewan Health Information Network (SHIN) is a Treasury Crown Corporation utilizing Saskatchewan Ministry of Health resources and contracted services to deliver the mandate of an electronic health record for Saskatchewan citizens.

The interoperable EHR is a private, lifetime record of an individual's key health history and care, providing authorized health care professionals with real-time access to patients' test results, past treatments and medication profiles – information they need to provide effective, safe treatment while protecting privacy and confidentiality.

Through SHIN, the province is able to secure funding from agencies such as Canada Health Infoway to advance EHR implementation.

Progress in 2007-2008

A New Government Direction – Growth, Security and Promises

The mission of SHIN is closely aligned with the new government's strategic priorities and promises as presented in the Minister's Mandate letter and the December 2007 Speech from the Throne. The efforts of SHIN are improving publicly funded health care and providing better workplaces for health care providers.

The Saskatchewan Health Information Network (SHIN) contributes to a high-quality health care system for all Saskatchewan people, regardless of where they live within the province. We are working with stakeholders and policy makers to achieve our common goal – better, faster, safer, and more secure health care.

- SHIN improves overall efficiency, effectiveness and sustainability of the health sector through the innovative use of technology. E-Health innovations and the Electronic Health Record will contribute to the fulfillment of the promise of up-to-date equipment where health care is required and the improvement of workplace conditions for health care providers. Technology solutions will work with new and existing equipment purchases to provide seamless adoption. HISC personnel and SHIN contracted resources are working side-by-side with health care providers to provide training and support for the adoption of new technology. Recent graduates expect to be working with the equipment they trained on; providing up-to-date equipment at the point of care increases the recruitment
- and retention ability of health regions and health care agencies. Using equipment such as the digital imaging system that replaces x-ray film and the chemicals required to develop it, contributes to better, safer working conditions.
- SHIN enhances the quality of patient care by supporting health professionals' decision-making at the point of care through improved access to the information they require. SHIN has successfully created elements of a shared patient-centric electronic health record (EHR) with more elements to follow. This health record will provide a longitudinal view of an individual's key health history and care. Residents will benefit when their authorized health care providers are able to access their health information wherever the resident seeks care. Important and potentially life-saving information will no longer be confined to file cabinets.
- SHIN improves the patient experience by supporting improved coordination between service delivery care providers. SHIN provides high levels of security and privacy safeguards to support the exchange of the information between care providers. Electronic records create audit trails that keep track of every time an electronic file is accessed, viewed and by whom. Only authorized care providers have access. The information that forms the electronic health record is accessed via a secure log-in to a central repository.
- All data is housed in secure data servers in the SHIN data centre.

- SHIN informs health system decision-making by providing the necessary information base to support planning, outcome measurements, accountability and research. De-identified data from our electronic health record is used anonymously for statistical reporting, quality improvement, outcome reporting, resource management, and public health communicable disease surveillance.

Saskatchewan Health Information Network Development

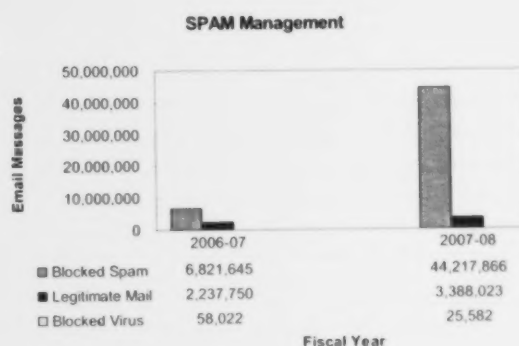
The provincial health information network connects health care providers across the province, ensuring access to timely and pertinent information for patient care. Through SHIN, the health information network continues to be enhanced in collaboration with health regions and health professionals across the province. This approach ensures that technology investments in the health sector are coordinated with the regions to determine the best way to deploy emerging information technologies for the benefit of the citizens of the province.

All health regions and more than 800 health service locations are connected to the health information network through CommunityNet and other secure telecommunication technologies. Work continues to extend secure network technologies to other health care locations across the province.

The network provides authorized health care professionals with access to clinical information systems and supports the Telehealth network, which enables health providers to consult and treat patients remotely. The network also provides email infrastructure to all health regions and retail pharmacies across the province, enabling health sector staff to communicate electronically to coordinate patient care.

To enable effective and timely communications between health care providers, the network blocks spam messages and viruses. In 2006-07 6,821,645 spam messages were blocked. In 2007-08 that number rose by 800 per cent, with 44,217,866 spam messages blocked. (See Figure 1, SPAM Management)

Figure 1



In 2007-08 the Ministry of Health, as well as other provincial partners including SaskTel and the Information Technology Office (ITO), continued to invest in CommunityNet, Saskatchewan's high-speed, province-wide telecommunications network, which connects schools, regional colleges, health facilities, public libraries and government offices. Further network capacity was added to accommodate the Ministry of Health data centre operations into the SHIN data centre. Planning has begun, in collaboration with the CommunityNet Steering Committee, to enhance the network to accommodate physician Electronic Medical Records (EMRs).

Another key focus was on testing and implementing increased network capacity and redundancy and significant infrastructure improvements in preparation for Radiology Information System (RIS) & Picture Archiving & Communication System (PACS) implementations scheduled to occur within the fiscal year, the Laboratory Results Project and to support the Prescription Information Program (PIP) e-prescribing phase. These programs are detailed under the section titled Projects in this document.

Voice Over Internet Protocol (VOIP) was enhanced for operations staff, improving call management technology for the Service Desk and adding capacity for instant routing of incidents to the applications and operations support teams to increase problem resolution and reduce costs.

An enterprise backup and recovery solution was procured to manage the increased backup requirements of new project implementations, which will also significantly reduce the backup windows and time to recover.

Technology Support Services

Service Desk

The Service Desk supports the Ministry of Health and health care staff across the province to make effective use of the provincial health information network and its technologies, services and systems.

Users of the Service Desk are provided with first line help desk assistance on all their computer problem calls. In addition, the Service Desk provides support for all information systems hosted in the Data centre, as well as desktop support for the ministry's employees.

As of March 31, 2008, 19,832 health care staff (of a potential 38,000 across the provincial health sector) and 944 Ministry of Health staff and SHIN contracted resources had access to the Service Desk. This reflects an increase of over 20 per cent or 4,176 users over March 31, 2007. (See Figure 2, SHIN Customer Growth). The number of users will increase as access to technology increases in the health sector.

Figure 2



To date, all health regions, as well as the College of Physicians and Surgeons of Saskatchewan, the Saskatchewan Cancer Agency, the Department of Family Medicine at the College of Medicine, the Saskatchewan Registered Nurses' Association, the Saskatchewan Association of Health Organizations (SAHO) and the Ministry of Health are utilizing this service. The Ministry of Health employees were also added to the customer base in 2007-08. Of the over 82,533 calls received by the Service Desk in 2007-08, less than 37,000 had to be dealt with by regional technical resources. This reduced the demand on limited resources in the health sector. Support Services staff directly resolved over 58 per cent of the calls.

In 2007-08, the annual survey of Service Desk system users found that 97.9 per cent of respondents rated the service provided by the Service Desk as satisfactory or better, with more than 64.5 per cent indicating they received exceptional service. The number of responses to the survey increased 11 per cent from 2006-07.

Service Desk support operates between 7:00 a.m. and 9:00 p.m. weekdays and on-call support for clinical systems hosted in the Data Centre is available 24 hours a day, seven days a week. These support services will continue to expand as additional critical 24 hours a day, seven days a week services are rolled out.

Data Centre Hosting Environment

Through SHIN, the Saskatchewan Ministry of Health provides a secure hosting environment to support the work of its health sector partners. The central hosting environment reduces the need for increasingly sophisticated information technology (IT) equipment and system specific resource demands on regions. Significant progress in the roll out of clinical applications and the start of the implementation of the electronic health record has resulted in the data centre doubling in size since 2004-05.

This centre is securely accessed by regions over the health information network and enables regions to share system solutions hosted centrally in the data centre. This reduces costs to the health sector and enables better and more integrated patient care systems. Systems are built and sized to meet existing capacity and are designed to be scaleable to meet future requirements.

Thirty-eight systems are centrally hosted for regions, agencies and the ministry. These include the Pharmaceutical Information Program (PIP), which is accessed by over 2,000 health care professionals to assist in identifying potential drug interactions and other prescription management activities: (an increase in users of 66 per cent from 2006-07); and the Chronic Disease Management (CDM) system which primary care physicians across the province utilize to manage the care of over 15,000 chronic disease patients.

At the end of 2007-08, other systems used by health region staff and health care professionals included:

- The Shared Client Index (SCI) provides identification services for all patients who received care in a Saskatchewan hospital even though the same patient

may have different registration numbers in each facility. SCI is now deployed in eleven regional health authorities and, by identifying patients, enables more accurate and timely sharing of patient records between facilities as patients are transferred.

- The Radiology Information System (RIS) and Picture Archiving Communication System (PACS) in Saskatoon and Cypress Health Regions, provides health care providers with immediate and secure access to digital diagnostic images. It is expected that both health regions will be completely filmless in 2008. Benefits for patients of PACS include: improved service in rural areas, decreased waiting times between tests and results, the elimination of X-ray film transport between locations and enhanced patient safety. For health care providers, benefits include: better patient information - where and when providers need it, safer workplaces and state-of-the-art digital systems. In 2007-08, 88,000 images were loaded into the PACS repository.
- The Environmental Lab component of the Laboratory Information Management System (LIMS) for the Saskatchewan Disease Control Laboratory (SDCL), which tests water quality for the province. During peak volume times, the SDCL will receive 600 specimens per day.
- An increasingly comprehensive set of Integrated Clinical Systems (ICS) support the delivery of front-line services in hospital admitting, health records, pharmacy and laboratory departments, as well as home care programs. Over 3,700 health care staff and professionals in our health regions utilize these systems.

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- The HealthCareersInSaskatchewan web site (www.healthcareersinsask.ca) reaches out across the globe to attract Health Professionals to Saskatchewan.
 - TeleHealth Saskatchewan continues to expand its locations. This provides access to specialized medical care for patients living in rural and remote areas, without extensive travel requirements. It also provides for educational sessions (local and national) to be shared across the province. Using telehealth diminishes the need for travel, and reduces costs while benefiting the environment. 1,691 telehealth conferences were scheduled in 2007-08.

Given the increasing demand for services, planning continues to expand the existing data centre, including additional space, cooling and power to accommodate the increased number of servers and applications to ensure a highly available service as additional mission critical systems come into production. Planning is also underway to develop a secondary data centre to provide load balancing and disaster recovery services for all mission critical applications.

Privacy and Security

Privacy is the fundamental right of individuals to control the flow of their personal health information, including collection, use and disclosure. Security provides the tools to protect privacy.

As an information management service provider, SHIN sets the highest standards in privacy protection and security of personal health information and ensures that privacy and security provisions are integrated into all SHIN initiatives and operations.

Privacy Protection

SHIN incorporates privacy protection into all aspects of its operations. Contracts and agreements with Saskatchewan health care organizations and service providers stipulate privacy protection as a top priority.

In 2007-08 SHIN began to focus on designing the privacy services that will be required for the Electronic Health Record (EHR). These services are:

- **Data Stewardship Services** These services support the operation of the EHR by providing the overarching business approach and legal framework within which personal health information (PHI) may be collected, used, disclosed, managed, protected, retained and disposed through the EHR.
- **Policy Services** These services consist of the creation of policy for all levels of EHR governance, stewardship, and on-going development and operation.
- **Centralized Privacy Service** These services are delivered directly to the individuals to whom the PHI in the EHR refers. This service will be based upon the service that was built to support the

Pharmaceutical Information Program (PIP).

- **Privacy Impact Assessment (PIA) Services** These services provide support for the creation of PIAs.
- **De-identification and Aggregation Services** The data held in the EHR is a valuable resource that should be leveraged in support of health services planning and research. In order that it may be used, de-identification and/or aggregation is one part of an overall program which helps ensure that when PHI is used for health research and planning, it is not used in any prejudicial fashion against either individuals or groups.

In September 2007, the PIP Centralized Privacy Service was expanded to support the Picture Archiving and Communication System (PACS). With this service, individuals may now call a toll-free number (1-800-667-1672) to ask questions about PIP and PACS, to request that their personal health information in those systems be masked, and to request a report that outlines who has accessed their record in PIP and PACS. After an initial uptake period, the frequency of phone calls to the Centralized Privacy Service has decreased. Since the program was implemented, less than one per cent of the total Saskatchewan population has chosen to mask their records. Most of the calls and requests to date relate to PIP.

SHIN participates as a member of Canada Health Infoway's Pan-Canadian Privacy Forum on EHR Information Governance. The mission of the Privacy Forum is for jurisdictions across Canada to share knowledge and experience in order to facilitate the development of common solutions to common problems related to the information governance issue of the interoperable EHR.

In 2008-09, SHIN will continue to design and begin to implement the privacy services for the EHR. SHIN will also be reviewing and updating its privacy and security policies.

Security

Security is critical in the operation of the health information network and data centre, and it will remain a key focus of ongoing development and enhancement. Saskatchewan is working in collaboration with the other provinces and Canada Health Infoway to ensure that the highest levels of security are incorporated into our health information technology solutions as technologies continue to evolve. A number of resources and technologies are employed to maintain the security of patient information through a complex Security Architecture. These materials and procedures are vital in maintaining the security of information on the network and in the data centre.

The security measures taken by SHIN ensure the protection of personal health information of Saskatchewan residents and at the same time allow authorized health care service providers to access the information required to provide patient care in a timely and efficient manner.

- **Network Security** Security of patient information is maintained through a complex security architecture that includes firewalls, intrusion-detection software, virus-detection measures, server isolation, user access controls and encryption. The architecture is designed to limit, control and monitor the access of information to approved individuals.

- **More Secure than Paper** Policies, practices and audit processes are built into all applications to increase the level of security for patient records and personal information beyond what has existed in the paper environment.
- **Audit Trails** Authentication procedures ensure access to specific information is only available to authorized personnel. Audit trails indicate when and who has accessed the data. Detailed testing is undertaken to ensure secure functioning of all applications.
- **Firewalls** Investments have continued in 2007-08 to replace and upgrade regional and data centre firewalls to the most current technology, configured to the best practices in security. Significant effort was undertaken this year to ensure software updates and configurations of all network devices are up-to-date with the highest level of security.
- **Physical Security** Physical security is maintained in the operation of the health information network and data centre. Redundancy of security devices have been put in place to ensure security and availability of hosted applications.

The highest levels of security are incorporated into all health information technology solutions as technologies continue to evolve.

- **Standards** Saskatchewan works collaboratively with the other provinces, Canada Health Infoway and the Canadian Organization for Advancement of Computers in Health (COACH) to ensure that the highest levels of security are incorporated into all health information technology solutions as technologies continue to evolve. Saskatchewan provides guidance to the COACH Guidelines for the Protection of Health Information through membership on the steering committee and content review teams.
- **Policies** Policies, practices and audit processes are built into all applications to increase the level of security for patient records and personal information beyond what has existed in the paper environment. Security policies are being improved and enhanced to assist practices, and audit processes to increase the level of security for patient records and personal information beyond what has existed with paper-based files. Using industry standards as defined by International Standards Organization, the security standard ISO 17799 has been maintained for information technology infrastructure following internationally recognized security best practices.
- **Compliance** The development of an internal security assessment process known as an Application Verification Toolkit (AVERT) ensures all new applications have been assessed for risk and security vulnerabilities. The AVERT process verifies that the security controls on personal health information continue to be effective and extensive. The AVERT process has been enhanced this year to address new threats and security industry

demands. The addition of new tools has strengthened and enhanced the auditing capabilities of the AVERT. Security maturity self-assessments are also being developed to assist the health sector in setting goals and objectives. Self-assessments are used to understand the current state, identify the target end state and then establish measurable steps to guide progress.

In 2007-08, SHIN supported the work of the provincial Chief Information Officer (CIO) Forum's Privacy and Security Sub-committees to establish provincial standards to protect personal privacy and ensure security uniformly across Saskatchewan.

Infrastructure

Infrastructure includes the network equipment that connects health professionals to the servers that house the data files and databases; the firewalls, which provide secure access to resources via the Internet, and CommunityNet; and the devices that monitor and manage its operation.

Effective utilization of the clinical systems housed in the data centre requires a high performance, highly available and highly secure infrastructure to deliver services wherever and whenever they are needed, and in a cost-effective manner.

To meet the future demands of the Electronic Health Record, SHIN has undertaken an extensive review of the data centre.

The review includes: network, storage, physical space, power, air conditioning and operational support and formed the basis for a new three-year infrastructure strategic plan.

- **Data Centre** Significant effort has been put into the planning of physical space, power and air conditioning. The physical data centre expansion planning is completed and the first phase saw the doubling of the existing space. The next phase for physical space expansion is scheduled for 2008-09. To properly maintain and protect equipment, additional power and air conditioning will be brought on line. Power and air conditioning has been shown to be mutually exclusive from the physical space and will be managed to meet the load levels of the new technologies independently. Key investments in data centre design tools have been made to help in planning and predicting load levels to ensure efficiency and optimized data centre use.
- **Network** Clinical decisions are becoming more and more dependant on information systems. 2007-08 saw the need for infrastructure upgrades that would provide high availability and redundancy to our clients. Steps were taken to establish additional secure access to the information to ensure authorized providers always have the necessary information to make decisions, no matter the state of the technology because of weather interference or accidental disruptions. Redundancy is backup hardware that is in place to allow for seamless failover. Failover is the ability to switch over automatically to a standby system during a failure or abnormal termination. Additional network connections have been installed at key facilities around the province to ensure uninterrupted network service.

In addition to the core and network connections, network speeds have been increased to provide faster and greater data volumes.

- **Storage** As data volumes increase, the size and availability of storage have become a greater emphasis. Significant effort in 2007-08 has been made in expanding the storage area network. Planning was undertaken to create a long-term storage strategy. This strategy will provide a roadmap to meet the current demands while planning for future needs. 2007-08 saw the implementation of a new storage array, as well as updated backup software with automated offsite backup to disk. In 2008-09 additional enhancements will be made to total data storage.

Project Services

The Saskatchewan Ministry of Health provides strategic leadership and project management support to define, coordinate and implement Saskatchewan's health information technology solutions.

Project initiatives, managed through the Saskatchewan Health Information Network (SHIN), respond to the priorities and plans of the ministry, regional health authorities and other stakeholders. Consistently strong project management works as a catalyst to deliver new systems and technology solutions and to ensure health care professionals have secure access to the right information, when and where it is required to provide quality care to the Saskatchewan public.

SHIN's project portfolio is based on three health sector information technology priority program areas:

- Integrated Clinical Systems (ICS) implementations for health regions;
- Province-wide health care delivery; and
- Saskatchewan's Action Plan for Health.

Integrated Clinical Systems Implementations (ICS) for Health Regions

The Integrated Clinical Systems (ICS) program includes of a series of point-of-service computer systems that enable front-line delivery of patient health care. ICS consists of home care, central patient index - registration, laboratory, transcription and pharmacy systems.

The Ministry of Health works with regional health authorities to implement the common, shared systems including upgrades to existing systems and automation of manual processes. The data centre in Regina hosts the systems; regional staff access information over the health information network.

ICS enables authorized health care providers to quickly and securely access a clinical view application, which provides a summary of relevant information about their patients gathered from the point-of-service computer systems. This integrated system ensures accurate and current patient information is available to authorized care providers when and where it is needed.

In 2007-2008, the following point-of-service computer systems were implemented by health authorities, with the assistance of SHIN: Registration in La Loche; Laboratory in La Ronge; Home Care enhancements in Heartland, Sun Country and Prairie North Health Regions; a software upgrade to the Long-Term Care system, used by all health authorities, commenced; and the procurement of a replacement regional clinical laboratory information system was completed.

To date, SHIN has completed the implementation of registration and laboratory in all midsize regions.
(See Figure 3)

With respect to the clinical view implementation and expansion, Phase II enhancements to the Sunrise Health Region pilot implementation were completed and negotiations with the clinical view product vendor for provincial licensing of the clinical view software were successfully concluded.
(See Figure 3 – ICS System Implementations).

Implementation is an ongoing process. The approach is staged, beginning with higher priority areas.

Legend

- Planning Stage
- ▲ Implementation Stage
- Complete

Figure 3 – ICS System Implementations

	Fiscal Yr 02/03	Fiscal Yr 03/04	Fiscal Yr 04/05	Fiscal Yr 05/06	Fiscal Yr 06/07	Fiscal Yr 07/08
Clinical View		○	▲	▲	▲	▲
Transcription			○ ▲	▲	▲	▲
Registration	○	▲	▲	▲	▲	▲
Pharmacy	○	▲	▲	▲	▲	▲
Laboratory	○ ▲	▲	▲	▲	▲	▲
Home Care	○ ▲	▲	▲	▲	▲	▲

Enabling Province-Wide Health Care Delivery

As an agency of the Saskatchewan Ministry of Health, SHIN is leading several concurrent projects which establish the foundation for the electronic health record (EHR) program and will promote the advancement of the Saskatchewan provincial EHR strategy. SHIN, in partnership with Canada Health Infoway, Inc. (Infoway), leveraged an additional \$8.3 million dollars of project funding for the EHR related projects in 2007-08.

Some of the highlights of the EHR strategy in 2007-08 included:

- **Radiology Information System (RIS) & Picture Archiving & Communication System (PACS)** – In coordination with Canada Health Infoway, RIS-PACS began implementation in 2007-08. Saskatoon Health Region implemented the PACS system for managing radiology images in November 2007, with Cypress Health Region implementing both RIS and PACS in November 2007. As a result, on February 4, 2008, the Swift Current Regional Hospital was the first hospital in Saskatchewan to begin film-less operation. In 2008-09, implementation of RIS and PACS in Prairie North and ongoing planning for Regina Qu'Appelle and the remaining mid-sized regions will be completed.
- **Electronic Health Record (EHR) - Laboratory Results Repository** – Concluded the procurement of the technology products required to create the solution and began the detailed design and implementation planning activities.
- **Pharmaceutical Information Program (PIP) (Messaging and Integration)** – Completed the software build work to support the pan-Canadian drug information system message standard (CeRx) and started the build work to create the vehicle for the PIP application to communicate and integrate with vendor pharmacy systems, Electronic Medical Records (EMR) software and the EHR.

- **Shared Client Index (SCI)(Client Registry)** – Configured all health regions' admission, discharge and transfer systems (e.g. registration) to electronically send information to the Index. Configured Saskatoon and Five Hills Health Regions to electronically receive information from SCI. Configured SCI to electronically send information to provincial RIS - PACS solution and upgraded the software to the latest version to support future integration into the EHR.

Figure 4 illustrates the continuing success Saskatchewan has had in implementing components of the EHR, each of which is improving health care for our citizens.

Legend

- Planning Stage
- ▲ Implementation Stage
- Complete

Figure 4 – Provincial Electronic Health Record Program

	Fiscal Yr 03/04	Fiscal Yr 04/05	Fiscal Yr 05/06	Fiscal Yr 06/07	Fiscal Yr 07/08
Provider Registry	○ ▲	▲	▲	▲	▲
Drug Information	○	○ ▲	▲	▲	▲
Client Registry		○	▲	▲	▲ ■
Diagnostic Imaging		○	○	▲	▲
Laboratory Information			○	○	○ ▲
Electronic Health Record				○	○ ▲
Public Health					○
Telehealth		○	▲	▲	■

Project Name	Project Description	Accomplished in 2007-2008
Pharmaceutical Information Program (Drug Information System)	The Pharmaceutical Information Program (PIP) is a key component of the Electronic Health Record strategy for Saskatchewan. Medications are one of four major components of the EHR, which include drugs, lab results, diagnostic imaging and service events. PIP will be deployed province-wide in the ambulatory care environment via a high speed, secure health sector network. The primary goal of PIP is to improve quality of care delivered by providing health care professionals with the information and tools needed to make optimal drug therapy decisions.	Completed the software build work to support the pan-Canadian drug information system message standard (CeRx) and started the build work to enable the PIP application to use the message standard to facilitate integration with vendor pharmacy systems, Electronic Medical Records (EMR) software and the EHR.
Shared Client Index (Client Registry)	The Saskatchewan Shared Client Index is the trusted, and timely, source of client identification services to confidentially, accurately, securely, and uniquely identify all persons who have contact with the health care system in Saskatchewan regardless of service, location, residency, and/or insurance coverage. As a fundamental service for the electronic health record, this unique identification from the Shared Client Index will support the ability to provide health records and results from various locations and sources within the health care system.	Configured all health authorities admission, discharge and transfer systems (e.g. registration) to electronically send information to the Index. Configured Saskatoon and Five Hills Health Regions to electronically receive information from the solution. Configured the solution to electronically send information to provincial RIS - PACS solution and upgraded the software to the latest version to support future integration into the EHR.

Provincial RIS - PACS
& Archive (Diagnostic
Imaging)

The Saskatchewan Radiology Information System (RIS) Implementation Project is focused on the acquisition and implementation of a common RIS solution for Saskatchewan. The RIS is a computer system for tracking patients and medical imaging procedures that include exam scheduling, result reporting and billing. The RIS interfaces with existing hospital information systems to capture patient demographics and study (exam) orders. Once the information is captured, the medical imaging department will use the information to schedule and complete the exam. As exams are completed, a radiologist will interpret the images and record the results in the RIS. The RIS will interface with the Picture Archiving and Communication Systems (PACS) to link images and the interpreted results, making the full exam available to authorized users.

The Saskatchewan Picture Archiving and Communication System (PACS) Implementation Project is focused on the acquisition and implementation of a common PACS solution in Saskatchewan. PACS is a computerized system that enables the storage and distribution of medical images in a networked environment. The PACS component interfaces with the medical imaging device (i.e.: x-ray, CT scan, MRI, ultrasound, etc.) to capture the image in a digital format. Once captured, the image can be stored, archived, manipulated and shared over a computer network. A key advantage of the PACS is that it eliminates the use of traditional film as a presentation and storage medium.

In coordination with Canada Health Infoway, RIS-PACS began implementation in 2007-08. Saskatoon Health Region implemented the PACS system for managing radiology images in November 2007, with Cypress Health Region implementing both RIS and PACS in November 2007. As a result, on February 4, 2008, the Swift Current Regional Hospital was the first hospital in Saskatchewan to begin filmless operation. Ongoing implementations of RIS and PAC's in the mid size regions and Regina Qu'Appelle will continue, with Prairie North anticipated to be filmless in 2008-09.

Provider Registry

The Provider Registry System (PRS) stores and manages data about health care providers in Saskatchewan. As a trusted source that uniquely identifies providers with a Common Provider Number (CPN), the Provider Registry facilitates the exchange of health information. The PRS is a standards-based repository of core provider data supplied by authorized sources including (but not limited to):

- College of Physicians and Surgeons of Saskatchewan
- College of Dental Surgeons of Saskatchewan
- Saskatchewan College of Pharmacists
- Saskatchewan Registered Nurses' Association

and available to authorized consumers including the regional health authorities. Consumers of the PRS receive data including CPN, credentials, expertise, license number, status, and work location to facilitate the formal and consistent exchange of health information.

Implemented a general release upgrade (version 4.0) to the software and began work on the upgrade required to support electronic messaging for the Pharmaceutical Information Program (version 4.2).

Electronic Health Record (EHR) Program

Establish a record that is available electronically to authorized health care providers and to the individual patient anywhere and anytime, in support of high-quality care. It is intended to provide individuals in Canada with a secure and private lifetime record of their key health history and care within the health system.

Concluded the procurement of the technology products required to create the solution. Work began on the detailed design and implementation planning activities.

Saskatchewan Laboratory
Results Repository (SLRR)

The Saskatchewan iEHR-Lab Results Repository (SLRR) project is being undertaken by the Health Information Solutions Centre (HISC) of the Ministry of Health in partnership with Canada Health Infoway (Infoway) to provide timely and accurate laboratory test results to the people using the information. In short, to ensure health care professionals have secure access to the right lab results, at the right time and place. Through the provision of accurate and timely lab results, it is expected that the overarching objective to provide timely and better quality patient care will be met.

A focus of the project is the electronic distribution of lab results to a variety of destinations but foremost to physician office computer systems. In order to facilitate this distribution, the project will see the implementation of pan-Canadian standards to normalize the differing lab test result names and message formats.

Concluded the procurement of the technology products required to create the solution. Work began on the detailed design and implementation planning activities.

Telehealth

Telehealth technology allows specialists to conduct consultations with patients and provide education and support to local physicians. Using advanced video technologies across the health information network, these services support the delivery of health services in remote communities across the province.

Opportunities for utilizing telehealth technologies continue to increase (for tele-consultations, professional education and meetings). A review was concluded to identify the future strategic direction of the Telehealth program. The INTERCEPT Project (Immediately Necessary Telehealth Emergency Room Consultation for Emergency Patient Treatment) will use videoconferencing technology to improve rural emergency patient care and make more efficient use of critical care resources by connecting two of Saskatchewan's rural hospital emergency rooms to the advanced treatment capabilities available in a tertiary hospital. Work began on this project late in the fiscal year and is targeted to be complete during the summer of the 2008-09 fiscal year.

The Telemental Health project will use Telehealth to improve access to mental health services to residents in northern Saskatchewan by reducing the geographic and economic barriers faced by many northern families who must travel long distances to access these health services. This project will support patients, health care providers and provide end-users with increased efficiency and responsiveness for their health care needs. Work began on this project late in the fiscal year and is targeted for completion during the summer of the 2008-09 fiscal year.

Enabling the Province's Action Plan for Health

The Saskatchewan government's plan *Healthy People, A Healthy Province. The Action Plan for Saskatchewan Health Care*, released in December 2001, adheres to a clear vision, building a province of healthy people and healthy communities, and addresses four main areas:

- doing more to support good health and prevent illness;
- providing better access to health services, including primary, hospital and emergency care;
- improving health workplaces and addressing shortages of key health providers; and
- placing a greater emphasis on quality, efficiency and accountability, in order to ensure the long-term sustainability of the Saskatchewan Medicare system.

Information Technology (IT) and IT management play an important role in enabling these areas. The Saskatchewan Ministry of Health is focused on developing innovative IT and IM solutions to provide the greatest potential for excellence in health service delivery. Each year several projects, that support this plan, are concurrently in progress (see Figure 5 – Provincial Action Plan for Health Program).

Some of the major project highlights for 2007-08 include:

- **Surgical Information System (Operating Room Scheduling)**
Developed the project deliverables to align with common surgical business processes and demonstrated developed components to key stakeholders to validate business alignment. Interface testing is underway between the Saskatchewan Surgical Care Network (SSCN) (www.sasksurgery.ca) and the Operating Room Manager. Local interfaces also established at Prince Albert Parkland Health Authority as part of the implementation phase.
- **Saskatchewan Disease Control Laboratory, Laboratory Information Management System (LIMS) Replacement**
Implemented the environmental components of the selected product. Completed the business process analysis and the detailed design of the clinical components of the product and started the configuration (build) work to facilitate the clinical implementation.
- **Primary Health Care - Electronic Medical Record (EMR)**
Documented the business, technical and workflow process requirements for the primary health care and the EMR software solutions. Prepared the Request for Proposal (RFP) to begin the procurement of solutions that address the requirements. Provided computer equipment and internet connectivity to primary health care practitioners in advance of the forthcoming solutions.

Legend

○	Planning Stage
▲	Implementation Stage
■	Complete

Figure 5 – Provincial Action Plan for Health Program

	Fiscal Yr 03/04	Fiscal Yr 04/05	Fiscal Yr 05/06	Fiscal Yr 06/07	Fiscal Yr 07/08
SDCL LIMS Replacement			○	▲	▲
Surgical Information System		○	○ ▲	▲	▲
Primary Health Care / EMR		○	○	○	○
Personal Registration System		○	○ ▲	▲	▲
Management Information		○	○ ▲	▲	▲
Staff Scheduling			○	▲	▲

Project Name	Project Description	Accomplished in 2007-2008
Surgical Information System (Operating Room Scheduling)	The SIS Project will replace current computerized and manual paper-based surgical services systems at six regional health authorities with a centrally hosted integrated suite of peri-operative applications provided by PICIS. The new applications, OR Manager and SmarTrack, will be integrated with Admitting, Discharge and Transfer (ADT) and Materials Management systems to support surgical bookings, intra-operative charting, surgical supply chain management and patient-resource management functionality. A custom interface will be developed to support surgical waitlist reporting to the SSCN Surgical Registry.	Developed common configuration requirements and design deliverables to align with common business processes. Substantially built common components in OR Manager in consultation with stakeholders. Testing is underway with interface between the Saskatchewan Surgical Care Network (SSCN) Surgical Registry and Operating Room Manager. Implementation activity is under way at the initial pilot site in Prince Albert Parkland Health Authority.

Primary Health Care - Electronic Medical Record (EMR)

Strategies for effective delivery of primary health care services to individuals, families and communities that are responsive to the community needs are central to primary health care reform and the sustainability of the health care system. To support these strategies, interactions with primary health care teams need to be linked through clinically relevant information systems with follow-up initiated by relevant members of the primary health care team. Innovative models of primary health care will result in better health, improved access, more satisfied providers and the relief of pressures elsewhere in the health system.

Documented the business, technical and workflow process requirements for the primary health care and the EMR software solutions. Prepared the Request for Proposal (RFP) to begin the procurement of solutions that address these requirements. Provided computer equipment and internet connectivity to primary health care practitioners in advance of the forthcoming solutions.

Staff Scheduling

The effectiveness of human resources is a key issue for the health sector, and the issues of escalating staff overtime, sick leave costs, and overlaps have resulted in the need for this system. The health care sector employs 37,000 employees of which approximately 24,600 are on some type of shift. Examples of significant benefits to the implementation of a staff scheduling system including reduced time spent on clerical tasks by clinical managers and support staff; reduced frustration by health professionals and, redeployment of nurse managers to deal with absence management and other clinical managerial tasks.

Work on this project began in early 2006 with the beginning of the planning phase, development of the steering committee and working groups. A pilot implementation was conducted in the Cypress Health Region in the fall 2006 with the intent to continue the roll out across the province in 2007-2008. The Saskatchewan Association of Health Organizations (SAHO) is taking a lead role in working with the Ministry of Health and the health regions. SHIN provides the enabling technology for this initiative. Kelsey Trail, Sunrise, and Prairie North are completed while pilots began in Heartland and Five Hills.

**Personal Health Registration
System Replacement**

This project is being undertaken to replace the current Person Registration System (PRS) within the Health Registrations and Vital Statistics Branch (HRVSB) of the Ministry of Health. The core business function of the new Person Health Registration System (PHRS) will be to register residents of Saskatchewan for the purposes of providing them with access to provincial health care benefits. The PHRS is used to issue persons the Health Services Number or HSN, and their plastic health cards for use at health care facilities in the province. The PHRS also interfaces to many other programs and computer systems in the provincial government, some relating to extended or supplementary health benefits, and some relating to other programs that provide other types of benefits for citizens, such as educational supplements.

Continued with software development activities of the software solution.

**Saskatchewan Disease Control
Laboratory (SDCL) Laboratory
Information Management System
(LIMS) Replacement**

The Saskatchewan Disease Control Laboratory (SDCL), formerly known as the Provincial Laboratory requires a robust information system capable of meeting the technical and operational needs of the laboratory, managing the daily transaction volumes and generating results to the client base on a timely basis. Deficiencies in technical or operational efficiency can directly impact patient care and disease surveillance (e.g. pandemic). The current Laboratory Information Management System (LIMS) was not meeting these objectives and a replacement solution was procured.

Implemented the environmental services components of the selected product. Completed the business process analysis and the detailed design of the clinical components of the product. Completed the configuration (build) of the clinical pilot that represents 80 per cent of the business processes and 20 per cent of the tests performed by the laboratory. With the pilot as a basis, started the configuration (build) work to facilitate the clinical implementation.

Management Information
(Information Resource
Development)

The Information Resources Development Program (IRD) will provide an environment and create an infrastructure that will provide a repository for many of the systems found in the health sector. Within this repository, new reports will be developed, information will be catalogued, toolsets will be developed, data quality will be addressed, systems will be linked and information managed. The ministry and health sector staff, professionals, providers, decision-makers, as well as researchers will be consulted in the process of developing services that will satisfy the information needs to continue to advance the betterment of the health of our citizens. The IRD Programme will also provide a vehicle to support decision-making and strategic development for many different stakeholders by fostering and creating an all-encompassing reporting environment that will aid in delivering meaningful information to meet the challenges of a changing environment.

The goal of Information Resources Development Program (IRD) is to provide an environment and infrastructure housing a data repository for many of the systems found in the health sector. This is being accomplished through projects focussing on integrating new datasets with the current data holdings. Within this repository, reports and toolsets are being developed, information is being catalogued, data quality is being addressed, and data from various systems are being linked and managed. Ministry and health sector staff, professionals, providers, decision-makers, as well as researchers are being consulted in the process of developing services that will satisfy the information needs to continue to advance the betterment of the health of our citizens. The IRD Programme will also provide a vehicle to support decision-making and strategic development for many different stakeholders by fostering and creating an all-encompassing reporting environment that will aid in delivering meaningful information-knowledge to meet the challenges of a changing environment.

Management's Responsibilities

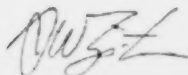
The accompanying financial statements included in the Annual Report for the year ended March 31, 2008, are the responsibility of management.

Management has prepared these financial statements in accordance with generally accepted accounting principles in Canada, consistently applied using management's best estimates and judgments where appropriate.

The SHIN Board is responsible for overseeing the business affairs of the corporation and also has the responsibility for approving financial statements. The board fulfills these responsibilities by reviewing financial information prepared by management and discussing the relevant matters with management and external auditors.

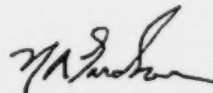
Management maintains a system of internal controls to ensure the integrity of information that forms the basis of the financial statements. The internal controls provide reasonable assurance that transactions are recorded and executed in compliance with legislation and required authority; that assets are properly safeguarded; and that reliable records are maintained.

The Provincial Auditor of Saskatchewan has audited the financial statements. His report to the members of the Legislative Assembly precedes the financial statements.



Scott Livingstone

Acting Chief Executive Officer – SHIN
October 1, 2007 – March 31, 2008



Neil Gardner

Chief Executive Officer - SHIN
April 1, 2007 – September 30, 2007

Financial Overview

The Saskatchewan Health Information Network (SHIN) as a Treasury Board Crown Corporation is responsible for setting and approving the yearly financial plan for the corporation. For 2007-08, SHIN's financial position continued to show significant increase with the acquisition of tangible capital assets at \$21,984,000. For 2007-08, SHIN is reporting a decrease in the Annual Surplus as compared with the budgeted amount, which will be discussed in the paragraphs below.

Revenue

SHIN received funding from multiple sources. Grants from the Saskatchewan Ministry of Health for 2007-08 were budgeted at \$32,435,000 comprised of \$22,840,000 in SHIN's yearly grant, utilization of deferred revenue and revenue from individual ministry branches. Actual revenue of \$32,263,000 resulted in a variance of (\$172,000). The variance is mainly due to the increase in recoverable work provided to the ministry \$585,000 and the deceleration of projects which were funded by Federal First Minister's deferred dollars (\$757,000).

Canada Health Infoway (CHI) provides funding to accelerate the implementation and adoption of Electronic Health Record initiatives in Canada. Funding from CHI provides for one-time investments in new technology, software, infrastructure and implementation service fees. The 2007-08 CHI funding amounted to \$8,360,000 and compares to budgeted revenue in the amount of \$11,325,000 resulting in a variance of (\$2,965,000). This variance is a direct result of the slowing down of major EHR initiatives. Projects are only implemented after due diligence is completed and stakeholder readiness is completed. Any approved funding from CHI that was not utilized (\$2,965,000) will continue to be available in the 2008-09 year

and will carry-forward into future years in our capital expenditure planning.

Actual interest and other revenue is \$673,000 compared to budgeted revenue of \$1,140,000. The variance of (\$467,000) is a result of work delayed that would normally result in recoveries from third parties (\$340,000), and lower than expected working capital (\$127,000).

Amortization

SHIN budgets using the cash flow method and therefore has not budgeted amortization, as it is a non-cash transaction.

Community Net

Telecommunications for the 2007-08 year is reporting expenditures of \$3,126,000 compared to budgeted expenditures of \$3,169,000, resulting in a favourable variance of \$43,000. Telecommunications is comprised of monthly charges from SaskTel and the Saskatchewan Ministry of Government Services for data communications within the province.

Corporate Services

Corporate Services for the 2007-08 year is reporting expenditures of \$1,069,000 compared to budgeted expenditures of \$1,380,000 resulting in a favourable variance of \$311,000. Expenditures from Corporate Services are comprised of accommodation costs, administration costs, legal services and other program areas such as architecture, information management, standards and change management. The majority of the favourable variance is related to the slow-down in project activities which in turn, affect these program areas: change management \$206,000, standards \$45,000

and architecture \$12,000 as well as \$47,000 in administration costs.

Infrastructure

Infrastructure for the 2007-08 year is reporting expenditures of \$453,000 and capital expenditures of \$331,000 for total expenditures of \$784,000 compared to budgeted expenditures of \$1,199,000 resulting in a favourable variance of \$415,000. Infrastructure consists of expenditures such as software/hardware tools that manage network traffic and improve its reliability and security. Other expenditures relate to the Data Centre for significant upgrades and expansion during the year. The favourable variance is a result of delayed work activities at March 31, 2008 in the following areas: data warehouse \$150,000, backup/software reporting tools \$117,000, security and storage \$75,000, Data Centre \$41,000, Telehealth and unplanned infrastructure \$32,000.

Ongoing Operations

Ongoing operations for the 2007-08 year is reporting expenditures of \$13,758,000 compared to budgeted expenditures of \$12,751,000 resulting in an unfavourable variance of (\$1,007,000). Operation costs support the core business activities of SHIN and include the Data Centre, contracted resources, hardware/software maintenance, telecommunications, supplies and leases. The majority of the unfavourable variance is attributed to an increase in non-budgetary items relating to capital project expenditures of (\$3,597,000). This is offset by a net spending decrease in general operating costs of \$1,450,000 and, as disclosed in the notes to the financial statements, a recovery of accrued maintenance expenses of \$1,140,000.

2007-2008 Financial Statements

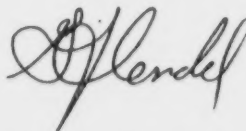
Auditor's Report

To: The Members of the Legislative Assembly of Saskatchewan

I have audited the statement of financial position of the Saskatchewan Health Information Network as at March 31, 2008, and the statements of operations, change in net financial assets, and cash flows for the year then ended. The Corporation's management is responsible for preparing these financial statements for Treasury Board's approval. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In my opinion, these financial statements present fairly, in all material respects, the financial position of the Corporation as at March 31, 2008, and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.



Regina, Saskatchewan
May 30, 2008

Fred Wendel, CMA, CA
Provincial Auditor

Statement 1

**Saskatchewan Health Information Network
Statement of Financial Position
as at March 31, 2008**

(thousands of dollars)

	<u>March 31, 2008</u>	<u>March 31, 2007</u>
Financial Assets		
Due from General Revenue Fund (Note 3)	\$ 17,361	\$ 3,805
Receivable from Ministry of Health	652	2,020
Other Accounts Receivable	6,876	10,331
	<u>24,889</u>	<u>16,156</u>
Liabilities		
Accounts Payable and Accrued Liabilities	1,463	3,868
Deferred Revenue (Note 11)	20,254	10,535
Obligations Under Capital Leases	811	250
	<u>22,528</u>	<u>14,653</u>
Net Financial Assets (Statement 3)	<u>2,361</u>	<u>1,503</u>
Non-financial Assets		
Tangible Capital Assets (Note 5)	51,583	36,645
Prepaid Assets	1,530	1,482
	<u>53,113</u>	<u>38,127</u>
Accumulated Surplus (Statement 2)	<u>\$ 55,474</u>	<u>\$ 39,630</u>

(See accompanying notes to financial statements)

Statement 2

**Saskatchewan Health Information Network
Statement of Operations
for the year ended March 31, 2008**

(thousands of dollars)

	<u>March 31, 2008</u> (Budget - Note 4)	<u>March 31, 2008</u>	<u>March 31, 2007</u>
Revenue			
Grants from Ministry of Health	\$ 32,435	\$ 32,263	\$ 24,988
Canada Health Infoway Funding	11,325	8,360	5,495
Western Health Information Collaborative	—	—	184
Interest and Other Revenue	1,140	673	1,088
	<u>44,900</u>	<u>41,296</u>	<u>31,755</u>
Expenses (Note 15)			
Amortization	—	7,046	4,366
CommunityNet	3,169	3,126	3,068
Corporate Services	1,380	1,069	1,055
Infrastructure	1,199	453	188
Ongoing Operations (Note 14)	12,751	13,758	11,574
	<u>18,499</u>	<u>25,452</u>	<u>20,251</u>
Annual Surplus	<u>\$ 26,401</u>	\$ 15,844	\$ 11,504
Accumulated Surplus, Beginning of Year		<u>39,630</u>	<u>28,126</u>
Accumulated Surplus, End of Year (Statement 1)		<u>\$ 55,474</u>	<u>\$ 39,630</u>

(See accompanying notes to financial statements)

Statement 3

**Saskatchewan Health Information Network
Statement of Change in Net Financial Assets
for the year ended March 31, 2008**

(thousands of dollars)

	<u>March 31, 2008</u>	<u>March 31, 2007</u>
Annual Surplus	<u>\$ 15,844</u>	<u>\$ 11,504</u>
Acquisition of Tangible Capital Assets	(21,984)	(16,596)
Amortization of Tangible Capital Assets	<u>7,046</u>	<u>4,366</u>
	<u>(14,938)</u>	<u>(12,230)</u>
Use of Prepaid Assets	<u>(48)</u>	<u>(970)</u>
	<u>(48)</u>	<u>(970)</u>
Increase (Decrease) in Financial Assets	<u>\$ 858</u>	<u>\$ (1,696)</u>
Net Financial Assets, Beginning of Year	<u>1,503</u>	<u>3,199</u>
Net Financial Assets, End of Year (Statement 1)	<u><u>\$ 2,361</u></u>	<u><u>\$ 1,503</u></u>

(See accompanying notes to financial statements)

Statement 4

**Saskatchewan Health Information Network
Statement of Cash Flows
for the year ended March 31, 2008**

(thousands of dollars)

	<u>March 31, 2008</u>	<u>March 31, 2007</u>
Cash Flows from (Used in) Operating Activities		
Cash Receipts	\$ 55,838	\$ 21,810
Cash Paid to Suppliers and Others	(20,859)	(15,080)
Increase in Operating Activities for Year	<u>34,979</u>	<u>6,730</u>
Cash Flows Used in Investing Activities		
Purchase of Tangible Capital Assets	(21,984)	(16,596)
Decrease in Investing Activities for Year	<u>(21,984)</u>	<u>(16,596)</u>
Cash Flows from Financing Activities		
Net Change in Obligations Under Capital Leases	561	250
Increase in Financing Activities for Year	<u>561</u>	<u>250</u>
Net Increase (Decrease) in Due from General Revenue Fund	13,556	(9,616)
Due from General Revenue Fund, Beginning of Year	3,805	13,421
Due from General Revenue Fund, End of Year	<u>\$ 17,361</u>	<u>\$ 3,805</u>

(See accompanying notes to financial statements)

**Saskatchewan Health Information Network
Notes to the Financial Statements
for the year ended March 31, 2008**

(thousands of dollars)

1. Description of Business

The Saskatchewan Health Information Network (SHIN) was established as a Treasury Board Crown Corporation by Order in Council 581/1997 under the provisions of *The Crown Corporations Act*, 1993 effective August 19, 1997.

SHIN was created to design, implement, own, operate, and manage a provincial health information network. SHIN's purpose is to foster the development of the health information technology sector, to foster re-engineering of health delivery processes and to protect health information as a strategic resource.

2. Significant Accounting Policies

These financial statements are prepared using Canadian generally accepted accounting principles appropriate for the public sector and reflect the following significant accounting principles:

a) Basis of Accounting

The financial statements are prepared on the accrual basis of accounting.

b) Revenue

Revenues are recognized in the period in which the transactions or events occurred that gave rise to the revenues.

c) Expenses

Expenses represent the cost of resources consumed during the year for operations. Expenses include provision for the amortization of tangible capital assets.

d) Tangible Capital Assets

Tangible capital assets are recorded at cost and are amortized over their useful life.

Amortization is recorded, commencing with the quarter after the assets are placed into service, on a straight-line basis at the annual rates set out below:

Desktop Computer Hardware	33%
Computer Software	33%
Network Hardware, Software & System Development Costs	20%
Office Equipment	20%
Office Furniture	10%

**Saskatchewan Health Information Network
Notes to the Financial Statements
for the year ended March 31, 2008**

(thousands of dollars)

e) Non-financial Assets

Tangible capital and other non-financial assets are accounted for as assets because they can be used to provide services in future periods. These assets do not normally provide resources to discharge liabilities unless they are sold.

f) Measurement Uncertainty

The preparation of financial statements in accordance with Canadian generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amount of financial assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amount of revenues and expenses during the reporting period. These estimates are reviewed periodically, and, as adjustments become necessary, they are reported in earnings in the period in which they become known.

3. Due from General Revenue Fund

SHIN's bank account is included in the Consolidated Offset Bank Concentration arrangement for the Government of Saskatchewan.

Earned interest is calculated and paid by the General Revenue Fund on a quarterly basis into the Corporation's bank account using the Government's thirty-day borrowing rate and SHIN's average daily account balance. The Government's average thirty-day borrowing rate in 2008 was 4.08% (2007 - 4.15%).

4. Budget Approval

SHIN's budget is approved by the Board.

**Saskatchewan Health Information Network
Notes to the Financial Statements
for the year ended March 31, 2008**

(thousands of dollars)

5. Tangible Capital Assets

	March 31, 2008						March 31, 2007
	Desktop Computer Hardware & Software	Computer Network Hardware	Licensed or Multiple Application Software	Office Furniture & Equipment	System Development Costs	Total	Total
Opening Cost	\$1,074	\$6,102	\$6,898	\$779	\$58,589	\$73,442	\$56,846
Additions During the Year	-	945	-	275	20,764	21,984	16,596
Disposals	-	-	-	-	-	-	-
Closing Cost	\$1,074	\$7,047	\$6,898	\$1,054	\$79,353	\$95,426	\$73,442
Opening Accumulated Amortization	\$1,074	\$5,422	\$6,886	\$526	\$22,889	\$36,797	\$32,431
Annual Amortization	-	365	12	72	6,597	7,046	4,366
Disposals	-	-	-	-	-	-	-
Closing Accumulated Amortization	\$1,074	\$5,787	\$6,898	\$598	\$29,486	\$43,843	\$36,797
Total Tangible Capital Assets	-	\$1,260	-	\$456	\$49,867	\$51,583	\$36,645

Included in the System Development Costs are \$19,138 invested in systems that are currently not in production and, therefore, not amortized.

6. Maintenance Agreements for Software

SHIN has several agreements with software vendors to provide maintenance for software that has been purchased by SHIN. A total of \$2,229 was spent in 2008 (2007 - \$3,160) and \$5,766 is committed for the current year and will likely continue into the future.

Saskatchewan Health Information Network
Notes to the Financial Statements
for the year ended March 31, 2008

(thousands of dollars)

7. Related Parties

These financial statements include routine transactions with related parties. SHIN is related to all Saskatchewan Crown agencies such as ministries, corporations, boards and commissions under the common control of the Government of Saskatchewan. Related party transactions to March 31, 2008, include the following:

	<u>March 31, 2008</u>	<u>March 31, 2007</u>
Revenue		
Regional Health Authorities	\$1	\$19
Health Quality Council	51	227
Saskatchewan Association of Health Organizations	342	36
Accounts Receivable		
Regional Health Authorities	\$ -	\$10
Health Quality Council	-	99
Saskatchewan Association of Health Organizations	233	36
Expenditures		
Regional Health Authorities	\$1,920	\$1,588
Health Quality Council	1	3
Ministry of Government Services	2,138	1,978
Saskatchewan Association of Health Organizations	402	674
Saskatchewan Cancer Agency	1	3
Saskatchewan Opportunities Corporation	-	432
SaskTel	1,591	1,484
Accounts Payable		
Regional Health Authorities	\$70	\$327
Ministry of Government Services	168	-
Saskatchewan Association of Health Organizations	32	137
Saskatchewan Cancer Agency	-	1
SaskTel	-	562

Other transactions with related parties and amounts due to/from them are described separately in the financial statements and the notes thereto.

Routine operating transactions with related parties are recorded at the rates charged by those organizations and are settled on normal trade terms. In addition, SHIN pays Provincial Sales Tax to the Saskatchewan Ministry of Finance on all its taxable purchases.

The Ministry of Health provides management and technical services to SHIN without charge.

Saskatchewan Health Information Network
Notes to the Financial Statements
for the year ended March 31, 2008

(thousands of dollars)

8. Financial Instruments

SHIN's financial instruments include due from the General Revenue Fund, accounts receivable and accounts payable. The carrying amount of these instruments approximates fair value due to their short-term nature. These instruments have no interest or credit risk.

9. Capital Leases

SHIN currently has three capital leases on equipment with Hewlett-Packard Financial Services Canada Company and Dell Financial Services Canada. The minimum annual lease payments for the capital leases over the next five years are as follows:

2009	\$325
2010	325
2011	325
2012	253
2013	<u>196</u>
Total Minimum Lease Payments	<u>\$1,424</u>
Less Amount Representing Interest	<u>172</u>
Balance of the Obligation	<u><u>\$1,252</u></u>

The lease payments also include the provision for ongoing expenses that are not recorded until paid. Included in the minimum annual lease payments for the next five years are payments on a new lease with Dell Financial Services Canada. The lease was signed prior to year-end with payments beginning April, 2008.

Saskatchewan Health Information Network
Notes to the Financial Statements
for the year ended March 31, 2008

(thousands of dollars)

10. Operating Leases

SHIN has entered into a lease agreement with Saskatchewan Opportunities Corporation, a related party, for office space, which expires on April 30, 2009. The operating lease payments for the following three years are as follows:

2009	\$183
2010	15
2011	-
Total Lease Payments	<u>\$198</u>

SHIN has entered into several lease agreements with Hewlett-Packard Financial Services Canada Company for equipment. The operating lease payments over the next three years are as follows:

2009	\$567
2010	402
2011	100
Total Lease Payments	<u>\$1,069</u>

Saskatchewan Health Information Network
Notes to the Financial Statements
for the year ended March 31, 2008

(thousands of dollars)

11. Deferred Revenue

As of March 31, 2008, SHIN's deferred revenue balance is \$20,254. Deferred revenue is only used once all project planning and due diligence (including stakeholder readiness) is completed and other revenue opportunities (such as Canada Health Infoway) are maximized. The deferred revenue has been provided by the Ministry of Health and Canada Health Infoway, which are committed to developing information technology systems that support frontline delivery, improve access, quality and efficiency of care.

Deferred Revenue	April 1, 2007	2007-08 Expenditures	Additional Funds	March 31, 2008
<i>First Minister's Funding</i>				
Shared Client Index	\$434	\$434	\$ -	\$ -
Radiology Information System	1,898	1,898	-	-
Saskatchewan Laboratory Results Reporting	600	298	-	302
Provincial Lab Replacement	1,602	1,589	-	13
Surgical Information System (OR)	869	869	-	-
ESP Staff Scheduling Project	1,368	392	-	976
<i>Total First Minister's Funding</i>	<i>\$6,771</i>	<i>\$5,480</i>	<i>-</i>	<i>\$1,291</i>
<i>Other Deferred Revenue</i>				
Canada Health Infoway	\$ -	\$396	\$4,542	\$4,146
Saskatchewan Health Pay Forward	-	-	12,000	12,000
EMS Dispatch	304	-	-	304
West Nile	8	8	-	-
Renal Data Management	120	-	-	120
Diagnostic Imaging Wait List Registry	701	701	-	-
Primary Health Care Information Sites	2,631	588	-	2,043
Canadian Health Outcomes for Better Information and Care	-	-	80	80
Telehealth Initiatives	-	-	210	210
Physician Referral Guide Website Development	-	-	60	60
<i>Total Other Deferred Revenue</i>	<i>\$3,764</i>	<i>\$1,693</i>	<i>\$16,892</i>	<i>\$18,963</i>
Total Deferred Revenue	\$10,535	\$7,173	\$16,892	\$20,254

Saskatchewan Health Information Network
Notes to the Financial Statements
for the year ended March 31, 2008

(thousands of dollars)

12. Commitments

As of March 31, 2008, SHIN is committed to developing information technology applications totalling \$6,814 and technical support for internal and regional IT systems totalling \$1,660. The following table outlines the funds dedicated for capital and operational expenditures.

Commitments	Total Budgeted Costs	Total Expenditures March 31, 2008	Total Commitments March 31, 2008
Capital Projects	\$14,642	\$7,828	\$6,814
Operational Services	2,384	724	1,660
Total Commitments	\$17,026	\$8,552	\$8,474

13. Comparative Figures

Prior year figures have been reclassified to conform to present year presentation.

14. Recovery of Accrued Maintenance Expenses

In prior years, SHIN accrued annual maintenance costs owing to a vendor for systems not yet in use. The total amount of the accrual was \$1,140. SHIN signed a new contract with the vendor in 2007 which resulted in the forgiveness of these accrued maintenance costs. The forgiveness of these accrued expenses has been recorded as a reduction of current year's expenses for ongoing operations.

15. Schedule of Expenses by Object

Expenses	March 31, 2008	March 31, 2007
Purchased Services	\$9,372	\$7,463
Amortization	7,046	4,366
CommunityNet\Data Centre Hosting	4,043	3,436
Maintenance\Improvements	2,781	2,901
Space\Equipment Rental	1,007	722
Planning\Communications	845	1,054
Administrative	358	309
Total Expenses	\$25,452	\$20,251

